

**REMARKS**

Claims 1-17 are pending in the Application. Claims 1-17 stand rejected. Claims 1 and 14 are independent claims.

Claims 1 and 14 stand rejected under 35 U.S.C. ' 102(e) as allegedly being anticipated by Kim (U.S. 6,678,289). Claims 1 and 14 recite **“the gain waveguide is disposed on the grating layer in a direct contact with the first grating.”**

According to the United States Court of Appeals for the Federal Circuit, **a claim is anticipated only if a single prior art reference set forth all features recited in a claim** (*Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)), **including those in functional language** (*In re Schreiber*, 128 F.3d 1473, 1478, 44 USPQ.2d 1429 (Fed. Cir. 1997) (holding that the patent applicant is free to recite features of an apparatus claim in functional language as long as the features are not inherent to the prior art)).

As noted in the applicant’s traversal to the prior Office Action, Kim teaches that the first and second gratings 130 and 140 are **not in contact** with an active layer 150, the layer which the Office Action equates with the present gain waveguide. As such, Kim fails to show a gain waveguide that **“is disposed on the grating layer in a direct contact with the first grating,”** as recited in claims 1 and 14, and Kim fails to anticipate claims 1 and 14.

The Office Action, however, maintains the rejection alleging that at column 3, line 27, Kim “clearly teach the light generated in the first active layer (150) (the gain waveguide) is disposed on the grating layer (130) in a direct contact for transmitting the light through the first grating” (present Office Action, page 2)

Applicant respectfully submits at column 3, line 27, Kim does not provide whether each disclosed grating is in direct contact with the waveguide 150. Instead, Kim merely states that

“[i]n particular, for light that is **incident** into the first grating 130, the portion that has the predetermined wavelength is reflected by the first grating 130 and the portion which has a wavelength deviated from the predetermined wavelength is transmitted through the first grating 130.” Applicant respectfully submits that the statement above simply provides a characteristic of a general grating. The statement, however, **does not provide information as to whether such grating is in contact with the gain waveguide.**

Moreover, Figure 1 of Kim undeniably shows a **gap between each grating 130 and the waveguide 150, the gap filled with the lower cladding layer 120.** Therefore, the lower cladding layer 120, but not the gratings 130, is in a direct contact with the waveguide 150.

Furthermore, the applicant submits that the U.S. Patent Application Publication No. 2004/01090221 (“the ‘221 reference”), which the Office Action provides as a prior art reference, indicates that the diffraction gratings 4 that have the appearance similar to the gratings of Kim are **“formed inside an n-type InP substrate 2”** (paragraph 0035). Therefore, the ‘221 reference also appears to support that each grating of Kim is not in direct contact with the gain waveguide.

Kim, therefore, undeniably teaches an apparatus containing an active layer or a gain waveguide that is spaced apart from each grating 130 and 140, but not a “gain waveguide [that] **is disposed on the grating layer in a direct contact with the first grating,**” as recited in claims 1 and 14. Applicant respectfully submits that Kim does not anticipate claim 1 and 14, and applicant requests reconsideration and withdrawal of the rejections.


Other claims in this application are each dependent on the independent claims 1 and 14 and believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of the patentability of each on its own merits is respectfully requested.

Amendment  
Serial No. 10/825,816

If any issues remain which may be best resolved through a telephone communication, the Examiner is requested to kindly telephone the undersigned telephone number listed below.

Respectfully submitted,

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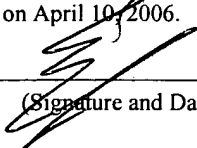
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